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ABSTRACT

A study was conducted to examine the relationships of various teaching effectiveness variables in the affective, behavioral, and cognitive domains. Subjects were 165 junior high school students and 212 senior high school students in communication courses. These students completed questionnaires consisting of Behavioral Indicants of Immediacy Scales, Generalized Immediacy Scales, affect variable scales, behavioral commitment scales, homophily scales, attentiveness scales, and cognitive learning scores. The results indicated significant relationships among (1) teacher immediacy variables, teaching effectiveness variables, and student attentiveness; (2) teacher immediacy variables and variables of teaching effectiveness and attentiveness; and (3) teacher immediacy and variables of interpersonal solidarity, teaching effectiveness, and attentiveness. Few significant differences occurred between sex groups and educational level groups in rating dependent measures. Grouping students by final grade revealed marginal differences in students' ratings of teacher immediacy, teaching effectiveness, and attentiveness. (RL)

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A Multivariate Study of Teacher Immediacy, Teaching Effectiveness, and Student Attentiveness at the Junior High and Senior High Levels

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A Multivariate Study of Teacher Immediacy, Teaching Effectiveness, and Student Attentiveness at the Junior High and Senior High Levels

ABSTRACT

This multivariate study focuses on (1) relationships between (a) teacher immediacy variables and (b) teaching effectiveness and attentiveness variables, (2) relationships between (a) teacher immediacy and interpersonal solidarity variables and (b) teaching effectiveness and attentiveness variables, and (3) differences between biological sex groups, between educational level groups, and final grade groups in rating teacher immediacy, teaching effectiveness, and student attentiveness variables. The results indicate significant relationships among (1) teacher immediacy variables, teaching effectiveness variables and student attentiveness, between (2) teacher immediacy variables and teaching effectiveness and attentiveness variables, and between (3) teacher immediacy and interpersonal solidarity and teaching effectiveness and attentiveness variables. Few significant differences occurred between biological sex groups and educational level groups in rating dependent measures. Marginal differences occurred among final grade groups in rating teacher immediacy, teaching effectiveness and attentiveness variables. The results and implications are discussed in this paper.

Each academic year teachers at various educational levels and from various course areas are evaluated by students. The items of the teacher evaluation questionnaires are designed to measure the affect dimensions of teaching, including attitudes toward the classroom atmosphere, content of the course, exercises in the course and nonverbal and verbal behaviors of the instructor. Implicit in the evaluation forms is that they can measure what constitutes good teaching. Past research by Getzels and Jackson,[1] Brim,[2] and Cyphert,[3] has concluded investigators know relatively little more today about what constitutes good teaching than at the beginning of the twentieth century.

In 1974 Heath and Neilson completed a comprehensive review of previous research on the relationship between teacher behaviors and student achievement.[4] The review revealed that past investigators have failed to develop consistent operational definitions of what constitutes good teaching, to develop an empirical basis for the perceptions of teacher-training objectives, to develop rigorous research designs, and to develop clear definitions of learning outcomes. In short, there has been a lack of replication of previous research studies, and many of the literature conclusions derived from one study at one educational level are indiscriminately cited as applicable to different levels of education.

Other research in the early 1960s by Travers,[5] Cronbach,[6] and DeCecco[7] suggested systematic investigations of affect, behavioral and cognitive learning domains as a method to understand the teaching evaluation construct. In 1968 Bloom conceptualized learning as (1) affect domain (development of a favorable or unfavorable attitudes toward learning), (2) behavioral domain

(behaviors that are called for or implied by cognitive knowledge), and (3) cognitive domain (attention, perception, comprehension and retention of knowledge).[8]

In a recent study Anderson defined a good teacher as one who produces positive outcomes in the affect, behavioral and cognitive domains which are termed teaching effectiveness variables.[9] She indicated that positive student affect is essential to enhance the learning process and suggested that more comprehensive studies need to be conducted to better understand the teaching effectiveness construct. Anderson also indicated that positive affect evolves from positive interpersonal relationships and designed a study to discover the relationship between nonverbal, immediacy variables and their relationships with the three domains and the interpersonal solidarity measure. Anderson's extensive review of literature indicated that immediacy consists of communication behaviors engaged in when a person (1) maintains closer physical distance, (2) communicates on the same spatial plane, (3) is not in front of or behind the other interactant, (4) touches, (5) uses direct body orientation, (6) is relaxed, (7) uses overall purposeful body movement, (8) engages in positive head nods, (9) uses eye contact, (10) spends time with the other interactant, (11) dresses informally and (12) is vocally expressive.[9*] Although other research by Beck and Lamert concluded that eye contact, facial expressions, posture, proximics and voice were important variables that determine first impressions of teachers,[10] Anderson's

*For a review of literature covering the immediacy construct see Anderson's dissertation entitled, "The Relationship between Teacher Immediacy and Teaching Effectiveness," West Virginia University, 1978. Mehrabian's definition of the immediacy principle and experimental research studies are of primary importance in developing her definition of immediacy. See, for example, Silent Messages, (Belmont, California: Wadsworth Publishing Company, 1971).

research was a pioneer effort to determine the role of immediacy in evaluating teaching effectiveness. The results for college students revealed that significant positive relationships exist between immediacy variables and affect, behavioral and the solidarity variable, but no relationship between these variables and cognitive learning.

This study attempts to replicate and extend the findings of Anderson's study. Junior high and senior high students enrolled in communication courses are administered the instruments utilized in her study. Two additional variables are introduced as exploratory variables to determine if homophily and student attentiveness variables correlate with immediacy variables, teaching effectiveness variables and the interpersonal solidarity variable (a description of the variables are presented in the instrument section of the paper and appear in Appendix A). Previous research by Elliot concluded that composite homophily scores for college students did not correlate with affect, behavioral and cognitive learning variables.[11] This study will determine if similar results occur at the junior high and senior high levels.

Attentiveness is also used as an exploratory variable. Norton and Pettegrew indicated that attentive style of communication is a complex process involving both sender and receiver. Students who are receivers of information are an integral part of the communication process.[12] This study attempts to determine if students who indicate they are nonverbally attentive to the teacher will rate the teacher more positively on immediacy variables, teaching effectiveness variables, and the interpersonal solidarity variables than students who are nonattentive.

Sex (male and female), educational level (junior high and senior high) and final course grade (A, A-, B, B-, C, C-, D, D-) are the independent variables in this study. These independent variables are utilized to determine

if they help to explain the variance. That is, in Anderson's study, much variance existed, and this difference possibly could be explained by demographic variables.[13]

Sex, for example, is used as an independent variable to determine if differences exist between males and females on the various dependent measures. A comparison of junior high and senior high results on dependent measures might reveal that more between group variances exist than within group variances on dependent variable scores. Final grade in the course was introduced to determine if students who received higher grades would rate their teacher higher on immediacy variables and teaching effectiveness variables, and be more attentive than students who received lower grades.

Research Questions

The following research questions were generated:

1. Will there be significant relationships among immediacy variables, teaching effectiveness variables, and the attentiveness variable?

2. Will there be significant differences between male and female students in rating teachers on immediacy variables, teaching effectiveness variables, and students' perception of their nonverbal attentiveness signals variable?

3. Will there be significant differences between junior high and senior high groups in rating teachers on immediacy variables, teaching effectiveness variables, and students' perception of their nonverbal attentiveness signals variable?

4. Will there be significant differences among final grade level groups in rating teachers on immediacy variables, teaching effectiveness variables, and students' perception of their nonverbal attentiveness signals variable?

5. Will a linear combination of immediacy variable measures significantly predict a linear combination of teaching effectiveness variables and student attentiveness at the junior high, senior high and composite levels?

6. Will a linear combination of immediacy and solidarity measures predict a linear combination of teaching effectiveness variables and student attentiveness at the junior high, senior high and composite level?

Procedures

The sample consisted of junior high students (n=165, 89 males and 74 females) and senior high students (n=212, 85 males and 127 females) from two midwestern schools. Students who completed the questionnaire were enrolled in communication courses. Subjects were administered a series of instruments during the next to last week of the spring term, 1979.

Instruments

The questionnaire consisted of Behavioral Indicants of Immediacy Scale (BII), Generalized Immediacy Scale (GI), affect variable scales (communication practices, subject matter or content, and course instructor), behavioral commitment scales (communication practices and enrolling in another course), homophily scale, attentiveness scale, and cognitive learning scores. All instruments are included in Appendix B.

A. Behavioral Indicants of Immediacy Scale

In 1978 Anderson developed the BII. The five-step, Likert-type scale consists of 15 items which focus on teacher immediacy in terms of eye contact, purposeful body movement, gestures, engaging in positive head nods, smiles and vocal expression. Factor analysis was completed on the data producing a sturcture where all items loaded above .55. Test-retest correlation coefficient analysis produced a .80 relationship. Thus, the scale is considered to be reliable and valid.[14]

B. Generalized Immediacy Scale

Anderson also developed the GI. It consists of nine item semantic differential scale to assess the perceived general immediacy level of the instructor.[15] The scale was designed to reflect how the insturctor fits the gestalt. Factor analysis revealed that all items loaded on a single-factor

structure from .73 to .93.

C. Affect Variables

Four five-step semantic differential scales from Osgood, Suci and Tannenbaum's book were utilized to measure three affect variables: communication practices, subject matter or content, and course instructor.[16] Previous research by Scott and Wheeless[17] and Anderson [18] established the reliability and validity of these instruments.

D. Behavioral Commitment

Behavioral commitment variables focus on (1) attempting to engage in communication practices learned in the course and (2) the likelihood of actually enrolling in another course of related content if a schedule so permits. Research by Fishbein and Agzen[19] and Anderson have established the reliability of the behavioral commitment measures. In Anderson's study the two commitment variables correlated at .57.[20]

E. Solidarity

Anderson's modified version of the Interpersonal Solidarity instrument developed by Wheeless for interpersonal communication use and was altered to make it more appropriate for an instructional setting.[21] Through factor analysis the undimensional 20-item measure of interpersonal solidarity has a reliability of .96.

F. Homophily

A measure of perceived homophily was developed by McCroskey, Richmond, and Daly.[22] Homophily focuses on similarity among individuals. Factor analysis was used to determine the dimensions of the homophily construct. Although this instrument has not been used in past teacher immediacy research, it is used as an exploratory variable in this study to determine if

perceived similarity of self and teacher correlated with the other variables. The scales consistently loaded on the homophily dimension at .75 or above with no secondary loading of .40 or above with internal reliability approximately .90.

G. Attentiveness

In 1979 Norton and Pettegrew published the results of their development of an attentiveness instrument. They completed a factor analysis of the thirty item test.[23] The results indicated the attentiveness construct is miltidimensional. Factor II, labeled attentiveness signals, accounted for 10.7% of the variance. In this study, nonverbal attentiveness items are used to determine if there is a correlation between the perceived immediacy levels of teachers and students perceived nonverbal attentiveness level. Because this is an exploratory variable in this study, attentiveness signals were correlated with the other variables in the study.

Statistical Analysis

Pearson product correlation coefficients, discriminant function analyses, and canonical correlations were completed on the data. Pearson correlations were completed to determine the univariate relationships among variables. Discriminant analyses were completed to determine differences among groups on the dependent measures. This statistical procedure maximizes differences between groups on variables included as predictors. Discriminant weights are used to maximize separation, and when linearly combined they differentiate groups. Initially, the best discriminating variable is selected. Next, the second variable is selected from the remaining variables using criteria that

would improve the miltivariate F in combination with the first.* This same process is continued until all significant variables are selected. Bartlett's chi square tests were also computed. Through this process Cooly and Lohnes contend that the optimum discriminant function is that which maximizes the ratio of the among group sums of squares

Canonical correlations also were completed on the data. Wimmer indicates that multivariate analysis is superior to univariate for four reasons:

> (1) the study of behavior and communication theoretically investigate the relationship between a single dependent variable and many independent variables; (2) several measures on one person are correlated by virtue of their common origin-examination of correlated variables independently ignores this fact and may alter results; (3) multivariate analysis can handle many variables simultaneously and thereby saves time and resources; and (4) investigations of clusters of variables adds to theory structure--univariate analysis slows the process of sturcture analysis.[25]

Through the statisitcal process of canonical correlational analyses, the linear relationship between two sets of variables can be determined. In this study, for example, the statistic is used to determine relationships between (1) immediacy variables and (2) teaching effectiveness varibles and attentiveness variables.

Results

In Table 1 the correlation among variables are reported. The results revealed significant relationships between and among affect, behavioral, immediacy, homophily, and attentiveness variables, but low correlation between these variables and the cognitive learning variables.

*Through this process the researchers determine the greatest minimization of Wilk's lambda. SPSS indicates lambda is an inverse measure of the discriminating power in original variables which has not yet been removed by the discriminant function. This statistical procedure is equivalent to selecting the variable which will maximize the overall multivariate F ratio to determine differences between group centroids. A centroid is a multivariate group mean.

The next phase of the analysis consisted of stepwise discrimiant functions utilizing sex, educational level, and course grade as independent variables. The results revealed that the overall multivariate F was significant ($p < .001$) between biological sex groups. That is, the differences between males and females varied significantly across dependent variables. The Bartlett's chi square analysis, however, revealed that only the first discriminant function, behavioral, communication practices, was significant ($p < .001$). (See Table 2)

A significant ($p < .001$) multivariate F also occurred between educational level groups. The Bartlett's chi square analysis revealed that significant differences existed between educational level groups on the solidarity measure. There also was a significant multivariate F among grade level groups. Again the results revealed significant chi square results on solidarity scores. (See Tables 3 and 4).

The next phase of the analysis involved an estimate of the number of significant relationships between (1) immediacy variables and (2) affect, behavioral, homophily, attentiveness and cognitive learning variables. The junior high results revealed a significant canonical variate .68 ($p < .001$) and indicated a linear relationship between immediacy variables and the affect, course instructor. The canonical variate for root 2 also produced a significant variate ($p < .001$). Significant correlations occurred between (1) GI scores (-.93) and Solidarity scores (-.93) and (2) BII scores (.91) and behavioral, engaging in communication practices scores (.10) and cognitive learning scores (.37). (See Table 5).

The senior high results also showed significant canonical correlations for the first two variates. Root 1 reflects a relationship between (1) GI (.55),

BII (.67) and (2) affect, course instructor (.20). Root 2 revealed significant relationships between (1) BII (.80) and (2) behavioral commitment, engaging in communication practices (.71), homophily (.36) and attentiveness (.55). (See Table B)

Significant results ($p < .001$) also occurred for the first two variates for the composite group. For variate 1 no significant relationships existed between two sets of variables. Root 2, however, showed significant relationships between (1) BII scores (.79) and affect, course evaluation scores (.71), homophily (.42), and attentiveness scores (.55). Significant realtionships also occurred between GI scores (-.88) and behavioral commitment, enrolling in another course (-.57), and solidarity scores (-.45). (See Table 7)

Canonical correlations coefficients also were computed for (1) BII, GI, and solidarity and (2) affect variables, behavioral variables, homophily, attentiveness, and cognitive learning scores. The junior high results indicate that three variates were significant ($p. < .001$). Root 1 indicates a significant relationship between (1) BII scores (-.38) and solidarity scores (-.73) and (2) affect, communication practices (-.24), behavioral commitment, engaging in communication practice scores (-.36) and attentiveness scores (p -.32); Root 2 revealed significant realtionships between (1) GI scores (1.14) affect, course instructor scores (.41) and attentiveness scores (30). In addition, there was a significant relationship between (1) BII scores (-.66) and (2) cognitive learning scores (-.69) course content (-.54), enrolling in another course (-.60). (See Table 8)

The senior high results also produced three significant variates ($p < .001$). Root 1 results indicated significant relationships between (1) BII (-.47), GI

(-.32) and solidarity (-.43), and (2) affect scores (-.70). Significant relationships for root 2 included (1) GI scores (-1.00) and affect, communication exercise scores (-1.00) and (2) between solidarity (.81) and behavioral commitment, engaging in communication practices (.88) homophily (.37), and attentiveness (.57). For root 3 significant relations existed between BII scores (1.17) and solidarity (.97), and (2) engaging in communication practice scores (.33) and cognitive learning scores (.25). (See Table 9)

The composite analysis revealed three significant variates ($p < .001$). Root 1 showed a strong positive relationship between (1) GI (.24), BII (1.13), and solidarity (.56) and (2) affect, enjoying communication practices scores (.57) and behavioral commitment, engaging in communication practices (.28). Root 2 revealed significant relationships between (1) GI scores (-1.05) and (2) affect, enjoying communication practices scores (-1.95). Root 3 indicated positive relationships between (1) BII scores (1.09) and (2) affect, enjoying communication practices scores (.58). In addition, significant relationships existed between (1) solidarity (-.79) and (2) engaging in communication practices scores (.29) and cognitive learning scores (-.36). (See Table 10)

Discussion

This study attempted to discover relationships among immediacy, affect, behavioral, solidarity, homophily, attentiveness, and cognitive learning variables. The correlational analyses support for the most part Anderson's study. This study adds support to the concept that immediacy is a measure that correlates with the teaching effectiveness varaibles and student attentiveness signals. Unlike Anderson's study, a significant positive correlation existed between cognitive learning and instructor evaluation.

This difference in the results of the two studies may be partially explained as (1) the instruments were presented near the end of the term whereas in Anderson's study the instruments were presented toward the beginning of the semester, (2) junior high and senior high students meet more frequently during the course and (3) there is a greater opportunity for interpersonal relationships to develop. An examination of the solidarity scores indicate higher means for the junior high and senior high groups than college groups used in Anderson's study.

Homophily and attentivensss instruments were introduced as exploratory variables in this study. The results show significant relationships between these variables and affect, behavioral, and solidarity variables. This seems to indicate that the student nonverbal attentiveness signals are linked to student's perceptions of affect, behavioral, and cognitive learning. The student who has a postive attitude toward course exercise, subject matter, ard the instructor enjoys engaging in more communication practices, is favorable about enrolling in additional communication courses, acquires a better course grade and engages in more nonverbal communication with the instructor than a person who rated the variables negatively.

The multivariate stepwise discriminant function analysis was completed for (1) biological sex groups, (2) educational level groups, and (3) course grade groups. The biological sex group analysis revealed marginal differences in group centroids between male and female gorups. An examination of the means for the various dependent variables indicated a three point difference on the BII scale and four point difference on the solidarity scale. The within group variance on the dependent measures was approximately the same. These results reveal that biolgoical sex was not a good discriminating variable.

Behavioral commitment, engaging in communication practices, was the only discriminant function that was significant when using Bartlett's chi square analysis.

Similar findings occurred for the educational level variable. Greater mean differences, however, existed between junior high and senior high groups in rating BII items and solidarity items than for the biological sex groups. Post hoc analysis using two way analysis of variance for the indepedent variables, sex (male and female), and educational levels (junior high and senior high) revealed significant differences for the main effects of education levels on solidarity. That is, junior high students rate solidarity items significantly higher than senior high students. When analyzing the variables using Bartlett's chi square procedure, only the solidarity discriminant function was significant. This result suggests that junior high students develop closer interpersonal relationships with their teacher than senior high students.

The discriminant analysis for course grade also revealed solidarity as the only significant discriminant function. Larger differences exist among group means than for the other independent variables. This indicates that course grade score was a better discriminant variable than sex or educational level. The mean for each dependent variable increases for the most part from one course grade level to the next. The largest mean differences occurred on BII scores and solidarity scores. The centroids also increased from one course grade level to the next. An examination of the standard deviations indicate a small within group variance and larger between group variances for the various variables. These results suggest that course grade is an important variable in understanding the immediacy construct, in students' perceptions of teaching effectiveness and student attentiveness. Simply stated, a student who acquires

an A in the course is more apt to rate the teacher higher on immediacy, affect and behavioral variables and feel the teacher is similar to him and be more nonverbally attentive.

The first three canonical correlational analyses were completed to determine linear relationships between (1) immediacy variables and (2) affect, behavioral, cognitive learning, interpersonal solidarity, homophily and attentiveness variables for junior high, senior high and composite groups. The results for all three analyses should be viewed with caution as no significant relationships exist between the two sets of variables for variate one. The analyses for the second variate reveal significant differences between the two sets of variables, but the eigenvalues explain only a marginal percentage of the variance between the two sets of variables.

The results for the junior high group point out that students who rate the BII scale high also rate the communication exericses high, enjoy engaging in communication practices, and receive higher course grades. These variables, however, correlate negatively with the GI scale and solidarity scale. An examination of previous immediacy research does not present any theoretical reasons as to why this might occur. In fact, the canonical results reported in Anderson's study reveal positive relationships between BII scores and GI scores but correlate negatively with cognitive learning scores. She further indicated that impact of immediacy on cognitive learning may occur during the course. That is over time it may be argued that perceptions of teacher immediacy might lead to stronger feelings of liking and, as a result, stronger relationships to cognitive learning should be expected. Intuitively, Anderson's theory does seem reasonable as students who attend communication class five days a week have a greater opportunity to develop stronger interpersonal

relationships which might lead to students working harder to acquire higher grades. Further research is needed to determine (1) theoretical and predictive relationships between immediacy variables and affect, behavioral, and cognitive variables at various educational levels and for various academic subjects, and (2) relationships between specific nonverbal behaviors and gestalt impressions.

The canonical correlational analyses completed on senior high and composite groups revealed different results than the junior high analyses. At the senior high level significant postive relationships exist between BII scales, engaging in communication practices, homophily and attentiveness variables, but no relationship exist between these variables and cognitive learning. An interpretation of these findings is that students who rate the teacher high on immediacy items also rate the teacher high on homophily, enjoy communication practices and are more nonverbally attentive. The fact that these variables do not correlate highly with cognitive learning is difficult to explain. An interpretation generated by Friedrich indicated that 65% of student learning can be attributed to student ability and motivational levels.[26] This, however, does not explain the contradictory findings between junior high and senior high students. An examination of Piaget's theory of formal operations indicates that during early adolescents students are influenced more by adults, and thus it might be concluded, look to adults as authority figures whereas during mid and late adolescents a sense of equality supersedes submission to adult authority.[27] If this theory is applicable, one might hypothesis that junior high perceptions would be more structured so that there would be relationships among teaching effectiveness variables. At the senior high level this may not be true as a student may have a positive attitude

toward communication practices but not enjoy engaging in them or might not be motivated to study for examinations or to present information orally. That is, during mid and late adolescent period of students, there may not be a consistency between or among the way students evaluate the affect, behavioral and cognitive dimensions of learning.

An overall interpretation of the results of the first three canonical analyses indicates that BII scores are related to some affect and behavioral scores and to homophily and attentiveness scores. More research is needed to discover if these results can be replicated.

The second set of canonical correlations was completed between (1) BII, GI, and solidarity scores and (2) teaching effectiveness scores and attentiveness scores. The discussion of the results will be limited to variable one. For the junior high group the eigenvalue explains 69% of the variance. The other two variates explain very marginal amounts of the variance. The results indicate significant linear relationships between the first set of variables and attitude toward communication practices, engaging in communication practices, and attentiveness. An interpretation of these findings indicates immediacy variables and solidarity variables are important in developing students' attitudes toward communication practices and participation in them, and that students who rate their teacher high on immediacy variables and solidarity are more nonverbally attentive toward the teacher.

Although previous researchers have not attempted to correlate attentiveness and immediacy variables, it appears to be an important variable in understanding students' perceptions of teachers. Simply state, students who perceive teachers as being interpersonal-centered are more nonverbally active, encode more nonverbal messages so that both are aware of the two-way communication process.

The feedback presented by students should strengthen the interpersonal relationship.

The senior high and composite analyses did not reveal the same significant findings as the junior high results. Like the junior high results, significant relationships existed between the three variables of the first set, but did not reveal significant relationships with attentiveness and enjoyment in engaging in communication practices. The results were, however, significant ($p < .05$).

The results of the study point out for the most part that immediacy variables are related to affect, behavioral and cognitive learning at the junior high level. Immediacy variables are related to behavioral commitment, homophily and attentiveness variables at the senior high and composite levels. These findings, along with the findings of Anderson's study, demonstrate that immediacy is a salient variable in understanding students' perceptions of teaching effectiveness. There is a need to continue research in this area. Numerous questions could be generated in an attempt to better understand the teacher immediacy construct in terms of students' perceptions at various educational levels and for various subject areas. Some examples are:

1. Do students at different educational levels have different perceptions of what constitute good immediacy cues?
2. Do students at various educational levels give different attentiveness nonverbal cues? For example, self report test of nonverbal cues could be completed by students in elementary school and compared with junior high students, senior high students and college students.
3. Do students have certain expectations of immediacy cues for teachers who teach different subjects? For example, is the science teacher expected to be as immediate as the English teacher?
4. Do students expect male teachers to have a different set of immediacy cues than female teachers?
5. Do male and female students have different expectations about nonverbal cues from male and female teachers?

An attempt also could be made to determine if students with different personality types rate teachers differently on immediacy variables, the solidarity variables, affect variables, behavioral variables, homophily variables and attentiveness variables. For example, if Bem Sex-Role inventory was completed by students, comparisons could be made among androgynous, masculine, feminine, and undifferentiated students to determine how each group rates the teacher on immediacy variables. Comparisons among students could also be made on the affect, behavioral, solidarity, homophily and attentiveness variables.

In addition, there is a need to discover how communication apprehension, willingness to communicate, intelligence, etc., relate to immediacy and teaching effectiveness variables. In short, a need exists for continued research on the immediacy construct, developing new learning theories and utilizing multivariate statistics to increase understanding of the construct.

FOOTNOTES

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Appendix A

Name: _____

BII

Please mark these scales to indicate how you perceive your instructor in the teaching role. Please mark the following statements to indicate whether you: (7) strongly agree; (6) agree; (5) moderately agree; (4) are undecided; (3) moderately disagree; (2) disagree; or (1) strongly disagree. Please record the number of your response in the space provided beside each statement. There is no correct answer. Simply record your perceptions. Some of the questions may seem similar, but this is necessary. For example, if you agree with the first statement you would place 6 on the space to the left of number 1.

_____1. This instructor engages in more eye contact with me when teaching than most other instructors.

_____2. This instructor has a more tense body position while teaching than most other instructors.

_____3. This instructor gestures more while teaching than most other instructors.

_____4. This instructor engages in less movement while teaching than most other instructors.

_____5. This instructor has a more relaxed body position while teaching than most other instructors.

_____6. This instructor directs his/her body position more toward students while teaching than most other instructors.

_____7. This instructor smiles more during class than most other instructors.

_____8. This instructor engages in less eye contact with me when teaching than most other instructors.

_____9. This instructor is more vocally expressive while teaching than most other instructors.

____10. This instructor is more distant from students while teaching than most other instructors.

____11. This instructor directs his/her body position less toward students while teaching than most other instructors.

____12. This instructor gestures less while teaching than most other instructors.

____13. This instructor engages in more movement while teaching than most other instructors.

____14. This instructor is less vocally expressive while teaching than most other instructors.

____15. This instructor smiles less during class than most other instructors.

Homophily

Please place an "X" on the line that best describes your feeling toward your teacher. For example, if you strongly feel that your teacher "doesn't think like you," you would place an "X" on the first space, but if you strongly feel that your teacher "does think like you," you would place an X on the last space. If you sometimes feel that the teacher "doesn't think like you," you would place an X on the second space, but if you sometimes feel that the teacher "thinks like you," you would place an X on the fourth space. If, however, you feel undecided, place an X on the middle space. Please mark only one space for each set of terms.

I BELIEVE MY TEACHER

Doesn't think like me _____:_____:_____:_____:_____ Thinks like me

Behaves like me _____:_____:_____:_____:_____ Doesn't behave like me

Is similar to me _____:_____:_____:_____:_____ Different from me

Is like me _____:_____:_____:_____:_____ Is like me

Generalized Immediacy Scale

Immediate behaviors are those communication behaviors that make you feel comfortable with the person. The more immediate a person is, the more likely he/she is to communicate at close distances, smile, engage in eye contact, use overall body movement and gestures, touch others, relax, and be vocally expressive. In other words, we might say that the immediate person is perceived as friendly and warm.

Please mark only one space for each set of terms.

IN YOUR OPINION, THE TEACHING STYLE OF YOUR INSTRUCTOR IS VERY IMMEDIATE

Agree _____:_____:_____:_____:_____ Disagree

False _____:_____:_____:_____:_____ True

Incorrect _____:_____:_____:_____:_____ Correct

Wrong _____:_____:_____:_____:_____ Right

Yes _____:_____:_____:_____:_____ No

IN YOUR OPINION, INDICATE THE WORD THAT BEST DESCRIBES YOUR INSTRUCTOR'S TEACHING STYLE

Immediate _____:_____:_____:_____:_____ Not immediate

Cold _____:_____:_____:_____:_____ Warm

Unfriendly _____:_____:_____:_____:_____ Friendly

Close _____:_____:_____:_____:_____ Distant

AFFECT VARIABLES

THE COMMUNICATION EXERCISES IN THIS CLASS ARE

Good _____:_____:_____:_____:_____ Bad

Worthless _____:_____:_____:_____:_____ Valuable

Fair _____:_____:_____:_____:_____ Unfair

Positive _____:_____:_____:_____:_____ Negative

THE COURSE CONTENT IS

Good _____:_____:_____:_____:_____ Bad

Worthless _____:_____:_____:_____:_____ Valuable

Fair _____:_____:_____:_____:_____ Unfair

Positive _____:_____:_____:_____:_____ Negative

THE INSTRUCTOR IS

Good _____:_____:_____:_____:_____ Bad

Worthless _____:_____:_____:_____:_____ Valuable

Fair _____:_____:_____:_____:_____ Unfair

Positive _____:_____:_____:_____:_____ Negative

Behavioral Commitment Variables

I ENJOY ENGAGING IN THE COMMUNICATION PRACTICES LEARNED IN THIS COURSE

Likely _____:_____:_____:_____:_____ Unlikely

Possible _____:_____:_____:_____:_____ Impossible

Probable _____:_____:_____:_____:_____ Improbable

Would not _____:_____:_____:_____:_____ Would

IF TIME PERMITS I WOULD ENROLL IN ANOTHER COMMUNICATION COURSE

Likely _____:_____:_____:_____:_____ Unlikely

Possible _____:_____:_____:_____:_____ Impossible

Probable _____:_____:_____:_____:_____ Improbable

Would not _____:_____:_____:_____:_____ Would

INTERPERSONAL SOLIDARITY MEASURE

Please mark the following statements to indicate whether you (7) strongly agree; (6) agree; (5) moderately agree; (4) are undecided; (3) moderately disagree; (2) disagree; or (1) strongly disagree with each statement. Place the number on the space directly to the left of the item. All statements refer to your opinions about your teacher.

_____1. We are very close to each other.

_____2. This teacher has a great deal of influence over my behavior.

_____3. I trust this teacher completely.

_____4. We feel very differently about most things.

_____5. I willingly disclose a great deal of positive and negative things about myself, honestly and fully (in depth) to this teacher.

_____6. We do <u>not</u> really understand each other.

_____7. This teacher willingly discloses a great deal of positive and negative things about himself honestly and fully (in depth) to me.

_____8. I distrust this teacher.

_____9. I like this teacher much more than most people I know.

____10. I seldom interact - communicate with this teacher.

____11. I like this teacher.

____12. I understand this teacher and who he (she) really is.

____13. I dislike this teacher.

____14. I interact - communicate with this teacher much more than with other teachers.

____15. We are not very close at all.

____16. We share a lot in common.

____17. We do a lot of helpful things for each other.

____18. I have little in common with this teacher.

____19. I feel very close to this teacher.

____20. We share some private ways of communicating with each other.

ATTENTIVENESS

Beside each of the statements presented below, please indicate whether you (SD) Strongly Disagree, (D) Disagree, (U) Undecided, (A) Agree or (SA) Strongly Agree. For example, if you agree with the first statement, you would place and "X" under agree.

I have a habit of encouraging my teacher to continue talking by:	SD	D	U	A	SA
a. Frequently smiling during the class period.	( )	( )	( )	( )	( )
b. Frequently nodding my head during the conversation.	( )	( )	( )	( )	( )
c. Saying phrases like "I see," "Uh-huh," "I understand," or "that's interesting."	( )	( )	( )	( )	( )
d. Leaning toward the teacher.	( )	( )	( )	( )	( )
e. Looking at the teacher.	( )	( )	( )	( )	( )
f. Relating similar experiences during the conversation.	( )	( )	( )	( )	( )

Appendix B

TABLE I

Correlation Coefficients
Teaching Effectiveness Variables and Preditors

	ACP	ACC	AI	BCEP	BCED	CL	BII	GI	SOL	HOM	ATT
Affect, Comm. Practice		.67	.63	.59	.46	.16	.38	.50	.55	.17	.44
Affect, Course Content			.61	.65	.56	.11	.37	.44	.51	.18	.43
Affect, Instructor				.56	.63	.36	.39	.54	.72	.18	.41
Behavioral Commitment engaging in Practice					.67	.19	.39	.37	.52	.18	.39
Behavioral Commitment enrolling in Another Course						.12	.43	.47	.47	.19	.32
Cognitive Learning							.32	.17	.19	.26	.31
BII Scale								.60	.43	-.01	.13
GI Scale									.53	.21	.20
Solidarity										.31	.54
Homophily, Attitude Attentiveness											.20

TABLE 2

Discriminant Data for Multivariate Comparisons of Centroids: Composite

	Means										
	BII	GI	ACP	ACC	AI	BCEP	BCEC	CI	SOL	HOM	ATT
Males	73.6	33.2	15.1	15.5	16.8	14	12.8	4.2	82.9	11	18
Females	70.4	33.2	15.3	15.7	15.9	15	12.8	4.6	78.	11.2	18.5
	Standardized Discriminent Function Coefficient										
	-.13	.20	.26	.60	.17	- 1.03	.93	-3.5		-.73	.30
	Centroids										
Males	52.18										
Females	47.49										

Bartlett's chi square for Discriminent Function			
Roots	x_2	df	p
BCEP	34.59	10	.001

TABLE 3

Discriminant Data per Multivariate Comparisons of Centroids: Composite

	Means										
	BII	GI	ACP	ACC	AI	BCEP	BCEC	CL	SOL	HOM	ATT
Junior High	68.7	17	14.7	15	16.8	13.9	12.1	4.5	85.5	16.4	18.1
Senior High	74.8	16.3	15.7	16.2	16.1	15.1	13.3	4.3	76.1	10.9	18.4
	Standardized Disciminant Function Coefficient										
	.63	.04	.14	- .66	.45	.36	- .11	.24	.11	1.09	.29

	Centroids
Junior High	51.69
Senior High	47.18

Bartlett's Chi square for Discriminant Function			
Roots	x_2	df	p
	89.18	11	.001

TABLE 4

Discriminant Data for Multivariate Comparisons of Centroids: Composite

	Means									
	BII	GI	ACP	ACC	AI	BCEP	BCEC	SOL	HOM	ATT
D-	63.4	15.4	14.7	14.5	15.4	1e.4	11.0	71.9	9.7	17.1
D	63.1	14.7	13.2	13.7	14.6	12.3	11.4	68.4	11.2	16.7
C-	73.4	14.2	15.9	16.1	17	12.9	11.2	69.6	9.7	17.4
C	70.6	16.9	15.8	16	16.2	14.9	12.6	80.1	11	18.5
B-	71.4	15.5	15.2	15.3	16.9	14.8	13.3	81.2	11	18.7
B	71.3	17.3	15.1	15.6	17	15	13.1	84.8	11.4	17.8
A-	76.2	16.7	16.1	17	17.5	15.9	13.8	90.5	12.3	20.1
A	76.2	16.4	16.5	16.8	17.6	16	15	89.4	13.1	20.5

Standardized Discriminent Function Coefficients

- .23	.78	.6	.28	.40	-.20	.01	.50	.51	.55

	Centroids
D-	42.8
D	40.1
C-	43.1
C	48.2
B-	54.1
B	53.1
A-	58.5
A	59.6

Bartlett's Chi square Test of Significance for Discriminant Function

Root	χ^2	df	P
Solidarity	120.21	71	.001

Table 5

Junior High Students (N=165)

Variate	Eigen Value	Canon Corr	Wilks Lambog	x_2	df	p
1	.46	.68	.44	129.5	20	.001
2	.17	.42	.82	30.9	9	.001

Group 1 Variables	First Run	Second Run
Generalized Immediacy	.57	-.93
BII Scale	.61	.91
Group 2 Variables		
Affect, Comm. Practices	.04	.52
Affect, Course Content	.001	-.38
Affect, Course Instructor	.27	.06
Behavioral Commitment, enrolling in another course	-.16	.40
Cognitive Learning	-.27	.37
Solidarity	.10	-.93
Homophily	.13	.12
Attentiveness	.10	-.08

Table 6

Senior High Students (N=212)

	Eigen Value	Canon Corr	Wilks Lambog	x_2	df	p
1	.77	.88	.16	368.5	20	.001
2	.25	.50	.74	59.3	9	.001

Group 1 variables	First Run	Second Run
Generalized immediacy	.55	-.89
BII Scale	.67	.80
Group 2 Variables		
Affect, Comm. Practice	.07	.21
Affect, Course Content	.12	.11
Affect, Course Instructor		
Behavioral Commitment engaging in practices	-.05	.71
Behavioral Commitment enrolling in another course	-.07	-.06
Cognitive Learning	-.01	-.20
Solidarity	.09	-.28
Homophily	-.04	.36
Attentiveness	.03	.55

Table 7

Composite Group (N=377)

Variate	Eigen Value	Canon Corr	Wilks Lambog	x_2	df	p
1	.65	.81	.28	468.1	20	.001
2	.17	.41	.82	70.1	9	.001

Group 1 Variables	First Run	Second Run
Generalized Immediacy	.55	-.88
BII Scale	.69	.79
Group 2 Variables		
Affect, Comm. Practices	.10	.18
Affect, Course Content	.06	-.07
Affect, Course Instructor	.04	.71
Behavioral Commitment engaging in Pra cices	-.06	-.04
Behavioral Commitment enrolling in another Course	.06	-.59
Cognitive Learning	-.01	-.27
Solidarity	.06	-.45
Homophily	-.03	.42
Attentiveness	-.01	.55

Table 8

Junior High Students (N=165)

Variate	Eigen Value	Canon Corr	Wilks Lambog	x_2	df	p
1	.69	.83	.24	221.2	27	.001
2	.11	.34	.80	34.5	16	.005
3	.08	.29	.91	14.7	7	.004

Group 1 Variables	First Run	Second Run	Third Run
Generalized Immediacy	-.09	1.14	.38
BII Scale	-.38	-.66	.81
Solidarity	-.73	-.29	-.88
Group 2 Variables			
Affect, Comm. Practices	-.24	-.61	-.11
Affect, Course Content	-.16	-.54	1.08
Affect, Course Instructor	.12	.41	-.11
Behavioral Commitment engaging in Practices	-.36	.23	.22
Behavior Commitment enrolling in another Course	.02	-.60	-.28
Cognitive Learning	.11	-.69	-.37
Homophily	-.17	.01	-.04
Attentiveness	-.32	.30	-.83

Table 9

Senior High Students (N=212)

Variate	Eigen Value	Canon Corr	Wilks Lambog	x_2	df	p
1	.84	.91	.09	484.9	27	.001
2	.34	.58	.57	113.8	16	.001
3	.12	.34	.87	26.6	7	.001

Group 1 Variables	First Run	Second Run	Third Run
Generalized Immediacy	-.32	-1.08	.18
BII Scale	-.47	.03	1.17
Solidarity	-.43	.86	.97
Group 2 Variables			
Affect, Comm Practices	-.70	-1.04	-.65
Affect, Course Content	-.05	.05	-.32
Affect, Course Instructor	-.08	-.09	
Behavioral Commitment engaging in Practices	-.15	.88	.33
Behavioral Commitment enrolling in another Course	.05	.03	.17
Cognitive Learning	.01	.09	.25
Homophily	-.02	.37	-.02
Attentiveness	-.16	.57	.05

Table 10

Composite Group (N=377)

Variate	Eigen Value	Canon Corr	Wils Lambog	x_2	df	p
1	.77	.88	.15	693.3	27	.001
2	.26	.51	.68	137.4	16	.001
3	.06	.25	.93	24.4	7	.001

Group 1 Variables	First Run	Second Run	Third Run
Generalized Immediacy	.24	-1.05	.27
BII Scale	.43	.07	1.09
Solidarity	.56	.79	-.79
Group 2 Variables			
Affect, Comm Practices	.57	-.95	.58
Affect, Course Content	.08	.06	.34
Affect, Instructor	.01	-.32	.33
Behavioral Commitment engaging in Practices	.28	.37	-.29
Behavioral Commitment enrolling in another Course	.03	.22	.16
Cognitive Learning	.01	.12	-.36
Homophily	-.07	.40	.05
Attentiveness	.18	.62	-.25